

### **REMARKS**

Claims 1-27 are pending. Claims 1, 11-13 are independent claims. Claims 23-27 are amended for format. No new matter has been added. Claims 1, 7, 11-13, 19 and 23-27 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Yamamoto et al. (USP 4,883,834). Claims 2, 4-6, 14, and 16-18 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yamamoto in view of Wycech (USP 5,755,486). Claims 3 and 15 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yamamoto in view of Wycech and further in view of Kawasaki et al. (USP 5,782,730). Claims 8-9 and 20-21 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yamamoto in view of Wycech and further in view of Rowland et al. (USP 4,692,513). Finally, Claims 10 and 22 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yamamoto in view of Wycech and Kawasaki and Rowland and Bagga (USP 5,021,513). Applicants respectfully traverse these rejections.

### **Rejections under 35 U.S.C. § 102**

Independent claims 1 and 11-13 require, among other things, *“from about 20-30% by weight of an SBS block co-polymer; from about 5-20% by weight polystyrene; from about 0.5-5% by weight of a rubber; and from about 30-45% by weight of an epoxy resin.”* Yamamoto does not disclose the claimed ingredients in combination with one another. As such, Yamamoto certainly does not disclose the claimed ingredients in the claimed amounts.

Yamamoto discloses a primer composition essentially consisting of three components; including a resin obtained by graft-polymerizing a SBS block co-polymer, an epoxy compound, and a cross-linking agent. (Yamamoto Abstract). Yamamoto does not disclose polystyrene as a separate ingredient anywhere in the four corners of the patent, so it certainly does not disclose it in an amount of about 5-20% by weight. Indeed, Yamamoto does not disclose a composition identical to the claimed composition. Accordingly, Yamamoto simply does not and cannot anticipate claims 1-27.

With regard to claims 11-13 and 23-27, the compositions are required to have certain compression strengths and certain percent expansions. These physical traits are not inherent in the disclosure of Yamamoto because Yamamoto does not disclose a composition identical to the claimed composition, for at least the reasons described above.

Withdrawal of the 35 U.S.C. § 102 rejection of claims 1, 7, 11-13, 19 and 23-27 is respectfully requested.

### **Rejections under 35 U.S.C. § 103**

#### **A. No *Prima Facie* Case Made Because The Combination Of Yamamoto And Wycech Does Not Teach Or Suggest All Of The Elements Of Applicants' Claims**

The Examiner has failed to present a *prime facie* case of obviousness because the cited references, Yamamoto and Wycech, fail to teach or suggest all of the claimed limitations, as required under *KSR v. Teleflex*. The Examiner makes the argument that Yamamoto teaches SBS block co-polymer together with polystyrene and rubber and epoxy resin in the claimed ranges of weight percent. This is inaccurate. Yamamoto does not teach or disclose polystyrene as described above. Wycech does not cure this defect as it also does not teach or disclose or even mention the term "polystyrene" in the patent.

#### **B. Even If *Prima Facie* Case Made, Applicant Has Rebutted The *Prima Facie* Case**

It is not obvious to combine these ingredients together in the particular weight percentages found in the claims. Indeed, Applicants have found that the relative weight percentages of SBS block co-polymer with polystyrene and epoxy resin are important, and when used in an expandable composition, bring about an unexpected result.

In particular, polystyrene acts a sponge for both SBS and epoxy resin. In other words, SBS and epoxy resin compete with one another for solubility in polystyrene. If too much SBS is included in the formulation, it displaces the epoxy resin from the polystyrene, and the resulting formulation does not have the desired traits for an expandable reinforcer composition that can

adhere to the surface of a structural member. Similarly, if too little SBS is included, the expandable reinforcer composition does not have the desired mechanical properties, such as compressive strength. Thus, a specific balance is required among the claimed ingredients. The claimed weight percentages are balanced to prevent too much leaking of epoxy resin out of the formulation by controlling the amount of SBS in the formulation relative to the epoxy resin. None of the specific weight percentages among the distinctly claimed ingredients, or the ratio of weight percentages of the claimed ingredients, are taught or suggested by the combination of Yamamoto and Wycech.

Moreover, when the claimed formulation is expanded, Applicants achieved the surprising result that the particular combination of ingredients, in their relative amounts, led to a composition that both expanded to a high degree (80-220%) while maintaining such a high degree of compressive strength (at least about 1400 psi). (Specification, pg. 8, lines 9-19). As explained in earlier amendments and appeal briefs, this is surprising because one of skill in the art would expect that the more the composition expands, the less likely it would be able to maintain such a compressive strength. The evidence supporting the previous arguments is found in Chang Declarations I and II, attached to this document. Applicants respectfully request withdrawal of the obviousness rejections of claims 2, 4-6, 14, 16-18.

**C. The Combination Of Yamamoto, Wycech, Kawasaki, Rowland And Bagga Does Not Teach Or Suggest All Of The Elements Of Applicants' Claims**

The Examiner rejected claims 3, 8-10, 15 and 20-22 under 35 U.S.C. §103 as allegedly being obvious over Yamamoto and Wycech, and in various combinations with Kawasaki, Rowland and Bagga. These rejections are respectfully traversed. For the reasons discussed above, which are hereby incorporated, Yamamoto and Wycech do not disclose all elements of independent claims 1 and 11-13, from which claims 3, 8-10, 15 and 20-22 ultimately depend. Combination with Kawasaki, Rowland and Bagga, alone or in combination, do not cure the deficiencies of Yamamoto, even if used in combination with Wycech. Thus, the combination of five independent references does not render obvious these claims. Accordingly, and for at least these reasons, Applicants respectfully request withdrawal of the obviousness rejections of claims 3, 8-10, 15 and 20-22.

**CONCLUSION**

For at least these reasons, all pending claims in the application are now in condition for allowance. It is believed no additional fees are due with this response. However, if any additional fees are required in connection with the filing of this paper that are not identified in any accompanying transmittal, permission is given to charge our Deposit Account No. 18-0013 under order No. 65765-0085 in the name of Rader, Fishman and Grauer PLLC.

Dated: September 9, 2008

Respectfully submitted,

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Linda D. Kennedy

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RADER, FISHMAN & GRAUER PLLC  
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Attorney for Applicant

Enclosure: Chang Declarations I and II

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:

CHANG, CHIN-JUI et al.

Serial No.: 09/572,754

Filed: May 16, 2000

SOUND DEADENING AND STRUCTURAL  
REINFORCEMENT COMPOSITIONS AND  
METHODS OF USING THE SAME

Docket No.: 26845-B

Group Art Unit No.: 1772

Examiner: M. Patterson

Assistant Commissioner of Patents  
Washington, D.C. 20231

Sir:

DECLARATION 1

I, CHIN-JUI CHANG, declare and state as follows:

1. I am one of the inventors named on the above-referenced patent application. I am a group leader in the Structural Materials section of Sika Corporation.
2. Under my direction and control, the composition set forth in Table 1 of this Declaration was used to prepare a composition following the procedures described in the text of U.S. Patent No. 5,755,486 to Wytech which was cited by the Examiner in the second office action of this application. The percent expansion and compressive strength of the Wytech composition was determined and is reported in Table 1 below. The composition reported in Table 1 corresponds exactly to the preferred formulation of Table 1 in the Wytech '486 patent.

Ingredient	Trade Name	Composition
Epoxy Resin	Araldite 6010 <sup>1</sup>	50.45% <sup>2</sup>
Acrylonitrile-Butadiene Rubber	Nipol 1312 LV	4.33%
Calcium Carbonate	Winnifil SPT	5.81%
Carbon Black	Black Powder	0.13%
Fumed Silica	Cab-O-Sil TS720	3.55%
High Strength Glass Spheres	B38	22.4%
Curing Agent	Dicyandiamine G	4.33%
Accelerator	Amicure UR	1.29%
Blowing Agent	Celogen OT	0.71%
Volume Expansion, %		44.0% $\pm$ 0.1
Compressive Strength, psi		1131.0 psi $\pm$ 143.2

<sup>1</sup> A liquid bisphenol-A based epoxy resin.

<sup>2</sup> These percentages by weight correspond to the percentages by weight given in Table 1 of the Wycech patent.

3. These data clearly demonstrate that the compositions taught by Wycech do not exhibit sufficient volumetric expansion or compressive strength for use in structural reinforcement applications according to the invention. Wycech does not disclose a reinforcing composition which has a percent expansion of from about 80-220% as is recited by claims 11, 16, and 18 of the patent application. Furthermore, Wycech does not disclose a composition having a compressive strength of at least about 1400 psi as is recited by claim 12 and 17 of the patent application. By comparison, the present application discloses a compressive strength of at least about 1400 psi on page 8, line 24, and a percent expansion of

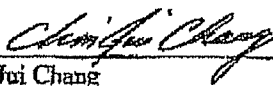
Serial No. 09/572,754

Docket No. 26845-E

from about 80-220% on page 8, line 17. A specific example is provided in Example 3 which provides a composition meeting all of the claim limitations of the independent claims.

I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that wilful, false statements and the like are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and such wilful false statements may jeopardize the validity of any patents issued from the patent application.

Any additional fee which is due in connection with this Declaration should be applied against Deposit Account No. 19-0522.

  
Chin-Jui Chang

Date: 10-16-2002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:

CHANG, CHIN-JUI et al.

Serial No.: 09/572,754

Filed: May 16, 2000

SOUND DEADENING AND STRUCTURAL  
REINFORCEMENT COMPOSITIONS AND  
METHODS OF USING THE SAME

Docket No.: 26843-B

Group Art Unit No.: 1772

Examiner: M. Patterson

Assistant Commissioner of Patents  
Washington, D.C. 20231

Sir:

DECLARATION 2

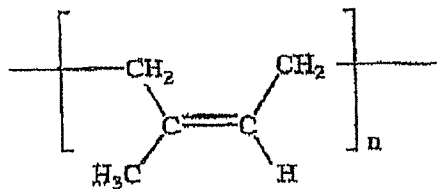
I, CHIN-JUI CHANG, declare and state as follows:

1. I am one of the inventors named on the above-referenced patent application. I am a group leader in the Structural Materials section of Sika Corporation.
2. Polyisoprene and SBS Block copolymer are fundamentally dissimilar because polyisoprene is a diene rubber that is a vulcanizable elastomer while SBS Block copolymer is a thermoplastic elastomer. Vulcanizable elastomers must be crosslinked by heating to provide strength and toughness, and are soft at room temperature. SBS Block copolymer can be handled like a thermoplastic elastomer and provides strength and toughness at room temperature without vulcanization. Upon cooling, SBS Block copolymer becomes hard and plastic. The structures of polyisoprene and SBS Block copolymer are as follows:

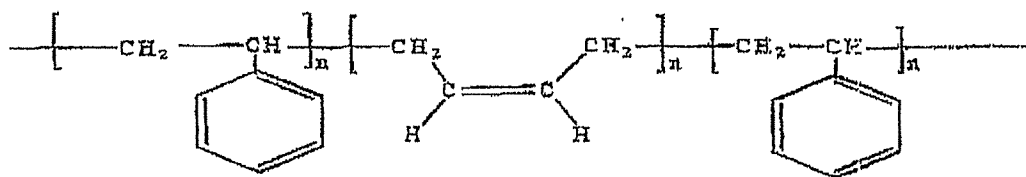


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Polyisoprene



SBS Block copolymer

3. As is evident from these structures, SBS Block copolymer and polyisoprene are structurally very dissimilar. The structural characteristics of the SBS Block copolymer and polyisoprene clearly impart functional properties that are not consonant with one another. This is critical to an appreciation of why polyisoprene and SBS Block copolymer are not interchangeable for use in the present application. SBS Block copolymer is not covalently bonded, while polyisoprene is covalently bonded. Polyisoprene must undergo a chemical process of crosslinking called vulcanization which results in a homopolymer having covalent bonds. The polymer process for SBS Block copolymer is reversible unlike that for vulcanized polyisoprene. In contrast, SBS Block copolymer is unique because it is not chemically crosslinked. Therefore, it is more easily processed and can be shaped more readily. By virtue of being a thermoplastic elastomer, SBS Block copolymer has two distinct phases that cause it to become fluid and rubbery at higher temperatures and hard and plastic at lower temperatures, making SBS Block copolymer ideal for use in structural foams for reinforcing hollow bodies. Polyisoprene lacks such characteristics and properties.


4. I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that wilful, false statements and the like are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and such wilful false statements may jeopardize the validity of any patents issued from the patent application.

Serial No. 09/572,754

Docket No. 26845-B

Any additional fee which is due in connection with this Declaration, should be applied against

Deposit Account No. 19-0522.

  
Chin-Jui Chang

Date: 10-16-2002